	/6	$r \sim r$				
Scoring Guidelin	10C	n: F Stage: Problem no.: 3				
Jeoing Galacin	Juror: Chian You Li	Signature:				
A report should include:	. 0					
• a presentation of the appropriate concept application of appropriate mathematics • re	ts, theories and principles of the problem • an e easonable experimental technique to gather and r experimental findings to draw suitable conclusion dable manner	record data (or demonstrate the phenomena if				
An opposition should show that: • the opponent challenged the reporter's unappropriate mathematics presented • the opponent appreciated and highlighted the students.	nderstanding of the presented concepts, theories a oponent critiqued the experimental technique use rengths and weaknesses of the report	and <i>principles</i> • the opponent understood the d and questioned the <i>validity</i> of the <i>data</i> • the				
A review should show that:						
important aspects (especially the controvers	tive summary of the performances the reporter in ial ones) the reviewer's personal opinion was in n-trivial and demonstrated, where possible, the red by the reporter and the opponent	evidence (not just superficial observations) •				
 The reporter, opponent and reviewer of the consider the following suggestions to a select each partial grade from each second 	consists of a partial grade for <i>physics, present</i> each <i>start with 5 points</i> . add to or <i>deduct</i> from the initial <i>5 points</i> . Ition and write it in the corresponding box. To questions were posed or not finding shortco					
Rep.: Hugen 5	Opp.: France 5	Rev.: Slovenge 5				
Physics ±3	Physics ±3	Physics ±3				
Correct and relevant physics	☐ Correct and relevant physics	Correct and relevant physics				
Scientific approach	Scientific approach	Scientific approach				
☐ Validity of conclusions	☐ Validity of conclusions	☐ Validity of conclusions				
Accurate answers	☐ Accurate answers	☐ Accurate answers				
Presentation ±1	Presentation ±1	Presentation ±1				
Clear and understandable	☐ Clear and understandable	☐ Clear and understandable				
☐ Appropriate manner	Appropriate manner	☐ Appropriate manner				
Overall impression	Overall impression	Overall impression				
Reporter ±1	Opponent ±1	Reviewer ±1				
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion				
☐ Structure	Shows the strong and weak points	Expresses own opinion about				
Explanation of formulae and symbols	of the report Finds shortcomings or errors in	topics presented or discussed Relevance of questions to both the				
Appropriate models, conformity of dimensions	the report Relevance of the questions	reporter and the opponent Draws attention to points missed				
Slides, on-site experiments, audio, video, as appropriate	☐ Contribution to the discussion	by the reporter or the opponent				
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and				
Novelty of the report		fight assistant, so we can archive your partial grades – please				

Final Grade: Opponent Final Grade: Reporter | Final Grade: Reviewer | U | Revised after IOC feedback and approved by EC on 2011-11-03

do not bend

☐ Novelty of the report

☐ Contribution to the discussion

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ALC: N	Alles Allies			er voor Omed		All Market	8	(1) E	William .	麒	200	8 8	Section 1	Sand F

Fight (Round no.): _	<u>4</u> Room: _	$\underline{\mathcal{F}}$ Stage:	Problem no.	:
Juror: Michael	Gierling s	Signature:	Court	-

• a presentation of the appropriate concepts, theories and principles of the problem • an explanation of the observed phenomena • an application of appropriate mathematics • reasonable experimental technique to gather and record data (or demonstrate the phenomena if appropriate) • linking of theoretical and experimental findings to draw suitable conclusions • an attempt to communicate difficult or complex ideas in an effective and understandable manner

An opposition should show that:

• the opponent *challenged* the *reporter's understanding* of the presented *concepts, theories* and *principles* • the opponent understood the *appropriate mathematics* presented • the opponent *critiqued* the *experimental technique* used and questioned the *validity* of the *data* • the opponent appreciated and highlighted the *strengths and weaknesses* of the report

A review should show that:

• the reviewer succeeded in giving an *objective summary* of the performances the *reporter* and *opponent* • the reviewer appreciated the *important aspects* (especially the *controversial* ones) • the reviewer's *personal opinion* was in evidence (*not* just *superficial observations*) • such personal opinions were *informative*, *non-trivial* and demonstrated, where possible, the reviewer's *understanding* of *concepts*, *theories*, *principles* and *appropriate mathematics* used by the reporter and the opponent

 The grade for each of the three teams consists of a partial grade for physics, presentation and for their specific role. The reporter, opponent and reviewer each start with 5 points. Consider the following suggestions to add to or deduct from the initial 5 points. Select each partial grade from each section and write it in the corresponding box. Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find. 									
Rep.: #UNGARY 5	Opp.: FRANCE 5	Rev.: SLOVENIA 5							
Physics ±3	Physics ±3	Physics ±3							
☐ Correct and relevant physics	☐ Correct and relevant physics	☐ Correct and relevant physics							
☐ Scientific approach	☐ Scientific approach	☐ Scientific approach							
☐ Validity of conclusions	☐ Validity of conclusions	☐ Validity of conclusions							
☐ Accurate answers	☐ Accurate answers	☐ Accurate answers							
Presentation ±1 +0,5	Presentation ±1	Presentation ±1							
☐ Clear and understandable	Clear and understandable	Clear and understandable							
Appropriate manner	☐ Appropriate manner	☐ Appropriate manner							
Overall impression	Overall impression	☐ Overall impression							
Reporter ±1 –a.5	Opponent ±1	Reviewer ±1							
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion							
☐ Structure	Shows the strong and weak points of the report	Expresses own opinion about							
Explanation of formulae and		topics presented or discussed							
symbols	☐ Finds shortcomings or errors in the report	Relevance of questions to both the reporter and the opponent							
Appropriate models, conformity of dimensions	Relevance of the questions								
Slides, on-site experiments, audio, video, as appropriate	Contribution to the discussion	Draws attention to points missed by the reporter or the opponent							
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and							
☐ Novelty of the report		fight assistant, so the archive your partial grades — please							
☐ Contribution to the discussion		do not bend							
Final Grade: Reporter	Final Grade: Opponent Revised a	Final Grade: Reviewer ofter IOC feedback and approved by EC on 2011-11-03							

		Fight (Round no.): Room:	: S1	tage: <u>1 </u>	_ Prob
Scoring	Guidelines	Juror: Olga Luisheva	Signature:	Oh	6

Scoring Guidelines	Juror: Olga (uishewa Signature:
application of appropriate mathematics • reasonable e	s and principles of the problem • an explanation of the observed phenomena • an experimental technique to gather and record data (or demonstrate the phenomena if all findings to draw suitable conclusions • an attempt to communicate difficult or ner
An opposition should show that: • the opponent challenged the reporter's understanding appropriate mathematics presented • the opponent cristian opponent appreciated and highlighted the strengths and	ng of the presented concepts, theories and principles • the opponent understood the tiqued the experimental technique used and questioned the validity of the data • the dweaknesses of the report
important aspects (especially the controversial ones) •	ary of the performances the reporter and opponent • the reviewer appreciated the the reviewer's personal opinion was in evidence (not just superficial observations) • d demonstrated, where possible, the reviewer's understanding of concepts, theories, porter and the opponent
The <i>reporter</i> , <i>opponent</i> and <i>reviewer</i> each <i>start</i> Consider the following <i>suggestions</i> to <i>add</i> to or a select each partial grade from each section and a select each partial grade from each section.	deduct from the initial 5 points.

Rep.: Hungaey 5	Opp.: France 5	Rev.: Slovenia 5
Physics ±3	Physics ±3	Physics ±3 +1
Correct and relevant physics	☐ Correct and relevant physics	☐ Correct and relevant physics
Scientific approach	☐ Scientific approach	☐ Scientific approach
─□ Validity of conclusions	☐ Validity of conclusions	☐ Validity of conclusions
☐ Accurate answers	☐ Accurate answers	☐ Accurate answers
Presentation ±1	Presentation ±1	Presentation ±1
☐ Clear and understandable	☐ Clear and understandable	☐ Clear and understandable
☐ Appropriate manner	☐ Appropriate manner	☐ Appropriate manner
Overall impression	☐ Overall impression	☐ Overall impression
Reporter ±1	Opponent ±1	Reviewer ±1
 Quality of experimental – technique(s) 	Response to the reporter's solution	Provides a thorough review of report and discussion
☐ Structure	Shows the strong and weak points	
Explanation of formulae and	of the report	topics presented or discussed
symbols	Finds shortcomings or errors in the report	Relevance of questions to both the
 Appropriate models, conformity of dimensions 	•	reporter and the opponent
	Relevance of the questions	Draws attention to points missed by the reporter or the opponent
Slides, on-site experiments, audio, video, as appropriate	☐ Contribution to the discussion	•
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and
>□ Novelty of the report		fight assistant, so we do archive your partial grades – please
Contribution to the discussion		do not bend
Final Grade: Reporter	Final Grade: Opponent Revised	Final Grade: Reviewer after IOC feedback and approved by EC on 2011-11-03

		Fight (Round no.):	Room: Sta	ge: Problem no.:
Scoring	Guidelines	Juror: Byland	Signature:	8 ()
		\mathcal{I}		

• a presentation of the appropriate concepts, theories and principles of the problem • an explanation of the observed phenomena • an application of appropriate mathematics • reasonable experimental technique to gather and record data (or demonstrate the phenomena if appropriate) • linking of theoretical and experimental findings to draw suitable conclusions • an attempt to communicate difficult or complex ideas in an effective and understandable manner

An opposition should show that:

• the opponent *challenged* the *reporter's understanding* of the presented *concepts, theories* and *principles* • the opponent understood the *appropriate mathematics* presented • the opponent *critiqued* the *experimental technique* used and questioned the *validity* of the *data* • the opponent appreciated and highlighted the *strengths and weaknesses* of the report

A review should show that:

Final Grade: Reporter

- the reviewer succeeded in giving an *objective summary* of the performances the *reporter* and *opponent* the reviewer appreciated the *important aspects* (especially the *controversial* ones) the reviewer's *personal opinion* was in evidence (*not* just *superficial observations*) such personal opinions were *informative*, *non-trivial* and demonstrated, where possible, the reviewer's *understanding* of *concepts*, *theories*, *principles* and *appropriate mathematics* used by the reporter and the opponent
- The grade for each of the three teams consists of a partial grade for physics, presentation and for their specific role.
- The reporter, opponent and reviewer each start with 5 points.
- Consider the following suggestions to add to or deduct from the initial 5 points.

 Select each partial grade from each sec 	tion and write it in the corresponding box. o questions were posed or not finding shortco	omings if there were none to find.
Rep.: Hungary 5	Opp.: France 5	Rev.: Slovenia 5
Physics ±3	Physics ±3	Physics ±3
☐ Correct and relevant physics	☐ Correct and relevant physics	☐ Correct and relevant physics
☐ Scientific approach	☐ Scientific approach	☐ Scientific approach
☐ Validity of conclusions	☐ Validity of conclusions	☐ Validity of conclusions
Accurate answers	☐ Accurate answers	☐ Accurate answers
Presentation ±1	Presentation ±1	Presentation ±1
☐ Clear and understandable	☐ Clear and understandable	☐ Clear and understandable
☐ Appropriate manner	☐ Appropriate manner	☐ Appropriate manner
Overall impression	☐ Overall impression	☐ Overall impression
Reporter ±1	Opponent ±1	Reviewer ±1
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion
☐ Structure	☐ Shows the strong and weak points	☐ Expresses own opinion about
☐ Explanation of formulae and	of the report	topics presented or discussed
symbols Appropriate models, conformity	☐ Finds shortcomings or errors in the report	Relevance of questions to both the reporter and the opponent
of dimensions	Relevance of the questions	☐ Draws attention to points missed
☐ Slides, on-site experiments, audio, video, as appropriate	☐ Contribution to the discussion	by the reporter or the opponent
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and
☐ Novelty of the report		fight assistant, so we con- archive your partial grades – please
☐ Contribution to the discussion		do not bend
		2000

Final Grade: Opponent

		C:3
Scoring Guideli		m: F Stage: Problem no.: 3
	Juror: NATTAK NO ZEALAN.	O Signature: K Well (
application of appropriate mathematics •	pts, theories and principles of the problem • an reasonable experimental technique to gather and experimental findings to draw suitable conclusionable manner	record data (or demonstrate the phenomena if
An opposition should show that • the opponent challenged the reporter's appropriate mathematics presented • the opponent appreciated and highlighted the second	<i>inderstanding</i> of the presented <i>concepts, theories</i> opponent <i>critiqued</i> the <i>experimental technique</i> use	and <i>principles</i> • the opponent understood the ed and questioned the <i>validity</i> of the <i>data</i> • the
important aspects (especially the controve	rective summary of the performances the reporter rsial ones) • the reviewer's personal opinion was in on-trivial and demonstrated, where possible, the red by the reporter and the opponent	n evidence (not just superficial observations) .
 The reporter, opponent and reviewer Consider the following suggestions to Select each partial grade from each see 	s consists of a partial grade for <i>physics, presen</i> each <i>start with 5 points</i> . add to or <i>deduct</i> from the initial <i>5 points</i> . ection and <i>write it</i> in the corresponding box. no questions were posed or not finding shortc	
Rep.: GERGELY 5	Opp.: Marie-leale 5	Rev.: Zige 5
Physics ±3	Physics ±3	Physics ±3
Correct and relevant physics	Correct and relevant physics	☐ Correct and relevant physics
Scientific approach	Scientific approach	☐ Scientific approach
☑ Validity of conclusions ☑ Accurate answers	☐ Validity of conclusions ☐ Accurate answers	☐ Validity of conclusions ☐ Accurate answers
Presentation ±1	Presentation ±1	Presentation ±1
Clear and understandable	Clear and understandable	☐ Clear and understandable
Appropriate manner by Overall impression	☐ Appropriate manner	Appropriate manner don't give of into
Reporter ±1	Opponent ±1	Reviewer ±1
Quality of experimental technique(s)	Response to the reporter's solution engage with theory	Provides a thorough review of report and discussion
☑ Structure ☑ Explanation of formulae and	Shows the strong and weak points of the report	Expresses own opinion about topics presented or discussed
symbols	Finds shortcomings or errors in the report	Relevance of questions to both the reporter and the opponent
Appropriate models, conformity of dimensions	☐ Relevance of the questions	Draws attention to points missed
Slides, on-site experiments, audio, video, as appropriate	Contribution to the discussion	by the reporter or the opponent
References, proper citations of ideas and input of others	talk about expensed?	mis sheet will be collected by the fight assistant, so we can scan it and
Novelty of the report	y=1+2.54 no	fight assistant, so we contain a fight assistant and a fight assistant and a fight assistant a fight assistant and a fight assistant a fight assistant and a fight assistant a fight as fight
\Box Contribution to the discussion 2		do not bend

Final Grade: Reviewer Revised after IOC feedback and approved by EC on 2011-11-03

Final Grade: Reporter

Final Grade: Opponent

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Fight (Round no.):	Room:	Jan .	Stage: _	1	Problem r	10.: 3
Juror: Akguldjies	Si	gnature	:	M		

• a presentation of the appropriate concepts, theories and principles of the problem • an explanation of the observed phenomena • an application of appropriate mathematics • reasonable experimental technique to gather and record data (or demonstrate the phenomena if appropriate) • linking of theoretical and experimental findings to draw suitable conclusions • an attempt to communicate difficult or complex ideas in an effective and understandable manner

An opposition should show that:

• the opponent challenged the reporter's understanding of the presented concepts, theories and principles • the opponent understood the appropriate mathematics presented • the opponent critiqued the experimental technique used and questioned the validity of the data • the opponent appreciated and highlighted the strengths and weaknesses of the report

A review should show that:

- the reviewer succeeded in giving an objective summary of the performances the reporter and opponent the reviewer appreciated the important aspects (especially the controversial ones) • the reviewer's personal opinion was in evidence (not just superficial observations) • such personal opinions were informative, non-trivial and demonstrated, where possible, the reviewer's understanding of concepts, theories, principles and appropriate mathematics used by the reporter and the opponent
- The grade for each of the three teams consists of a partial grade for physics, presentation and for their specific role.
- The reporter, opponent and reviewer each start with 5 points.
- Consider the following suggestions to add to or deduct from the initial 5 points.
- Select each partial grade from each section and write it in the corresponding box.

both a putilist thissing allswers, when no questions were posed or not finding shortcomings if there were none to find.							
Rep.:	Opp.: 5	Rev.: 5					
Physics ±3	Physics ±3	Physics ±3					
☐ Correct and relevant physics ☐ Scientific approach	☐ Correct and relevant physics☐ Scientific approach	☐ Correct and relevant physics☐ Scientific approach					
☐ Validity of conclusions ☐ Accurate answers	☐ Validity of conclusions ☐ Accurate answers	☐ Validity of conclusions☐ Accurate answers					
Presentation ±1	Presentation ±1	Presentation ±1					
☐ Clear and understandable ☐ Appropriate manner	☐ Clear and understandable☐ Appropriate manner	☐ Clear and understandable ☐ Appropriate manner					
☐ Overall impression	Overall impression	Overall impression					
Reporter ±1 Quality of experimental technique(s)	Opponent ±1 Response to the reporter's solution	Reviewer ±1 Provides a thorough review of report and discussion					
☐ Structure ☐ Explanation of formulae and	Shows the strong and weak points of the report	Expresses own opinion about topics presented or discussed					
symbols Appropriate models, conformity of dimensions	Finds shortcomings or errors in the report	Relevance of questions to both the reporter and the opponent					
of dimensions Slides, on-site experiments, audio, video, as appropriate	☐ Relevance of the questions ☐ Contribution to the discussion	Draws attention to points missed by the reporter or the opponent					
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and					
☐ Novelty of the report		archive your partial grade.					
Contribution to the discussion		do not bend					

Final Grade: Opponent

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Scoring Guidelin	MAC .	n: Stage: Problem no.:
A report should include:	<u> </u>	
• a presentation of the appropriate concepapplication of appropriate mathematics • r	ets, theories and principles of the problem • an e easonable experimental technique to gather and experimental findings to draw suitable conclusion dable manner	record data (or demonstrate the phenomena if
An opposition should show that: • the opponent challenged the reporter's unappropriate mathematics presented • the opponent appreciated and highlighted the st	nderstanding of the presented concepts, theories pponent critiqued the experimental technique use	and <i>principles</i> • the opponent understood the ed and questioned the <i>validity</i> of the <i>data</i> • the
A review should show that:		
<i>Important aspects</i> (especially the <i>controver</i>)	ctive summary of the performances the reporter sial ones) • the reviewer's personal opinion was in on-trivial and demonstrated, where possible, the red by the reporter and the opponent	n evidence (not just superficial observations) .
 The reporter, opponent and reviewer Consider the following suggestions to Select each partial grade from each set 	consists of a partial grade for <i>physics, presen</i> each <i>start with 5 points</i> . add to or <i>deduct</i> from the initial <i>5 points</i> . ction and <i>write it</i> in the corresponding box. no questions were posed or not finding shortc	
Rep.: France 5	Opp.: Slovenia 5	Rev.: Hungary 5
Physics ±3 †	Physics ±3	Physics ±3
☐ Correct and relevant physics	Correct and relevant physics	☐ Correct and relevant physics
Scientific approach	☐ Scientific approach	☐ Scientific approach
☐ Validity of conclusions	☐ Validity of conclusions	☐ Validity of conclusions
Accurate answers	☐ Accurate answers	☐ Accurate answers
Presentation ±1	Presentation ±1	Presentation ±1
Clear and understandable	☐ Clear and understandable	☐ Clear and understandable
☐ Appropriate manner	Appropriate manner	☐ Appropriate manner
☐ Overall impression	☐ Overall impression	Overall impression
Reporter ±1	Opponent ±1	Reviewer ±1
U Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion
Structure	Shows the strong and weak points of the report	Expresses own opinion about topics presented or discussed
☐ Explanation of formulae and symbols	Finds shortcomings or errors in	Relevance of questions to both the
Appropriate models, conformity of dimensions	the report Relevance of the questions	reporter and the opponent Draws attention to points missed
Slides, on-site experiments, audio, video, as appropriate	☐ Contribution to the discussion	by the reporter or the opponent

Final Grade: Reporter

☐ Contribution to the discussion

☐ Novelty of the report

References, proper citations of ideas and input of others

Final Grade: Opponent

Final Grade: Reviewer Revised after IOC feedback and approved by EC on 2011-11-03

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This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades - please

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						Same								_	-		_	

25	Fight (Round no.): 4 Room: F Stage: 2 Problem no.: 11 Juror: 1. Chael Greeking Signature: 6
onable (s and principles of the problem • an explanation of the observed phenomena • an experimental technique to gather and record data (or demonstrate the phenomena if al findings to draw suitable conclusions • an attempt to communicate difficult or ner
nent <i>cr</i>	ng of the presented concepts, theories and principles • the opponent understood the itiqued the experimental technique used and questioned the validity of the data • the

• a presentation of the appropriate concepts, application of appropriate mathematics . reason appropriate) • linking of theoretical and expe complex ideas in an effective and understandab

An opposition should show that:

• the opponent challenged the reporter's under appropriate mathematics presented * the oppo opponent appreciated and highlighted the strengths and weaknesses of the report

A review should show that:

- the reviewer succeeded in giving an objective summary of the performances the reporter and opponent the reviewer appreciated the important aspects (especially the controversial ones) • the reviewer's personal opinion was in evidence (not just superficial observations) • such personal opinions were informative, non-trivial and demonstrated, where possible, the reviewer's understanding of concepts, theories, principles and appropriate mathematics used by the reporter and the opponent
- The grade for each of the three teams consists of a partial grade for *physics*, *presentation* and for their *specific role*.
- The reporter, opponent and reviewer each start with 5 points.

 Consider the following suggestions to dad to or deduct from the initial S points. Select each partial grade from each section and write it in the corresponding box. Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find. 							
Rep.: FRANCE 5	Opp.: SLOVENIA 5	Rev.: HUNGARY 5					
Physics ± 3 ± 2	Physics ±3 +2	Physics ±3					
☐ Correct and relevant physics	☐ Correct and relevant physics	☐ Correct and relevant physics					
☐ Scientific approach	☐ Scientific approach	☐ Scientific approach					
☐ Validity of conclusions	☐ Validity of conclusions	☐ Validity of conclusions					
☐ Accurate answers	☐ Accurate answers	☐ Accurate answers					
Presentation ±1 +0,5	Presentation ±1 +0,5	Presentation ±1 +0,5					
☐ Clear and understandable	☐ Clear and understandable	☐ Clear and understandable					
☐ Appropriate manner	☐ Appropriate manner	☐ Appropriate manner					
Overall impression	☐ Overall impression	Overall impression					
Reporter ±1 [+0,5]	Opponent ±1 +0,5	Reviewer ±1 +0,5					
Quality of experimental technique(s)	Response to the reporter's solution	 Provides a thorough review of report and discussion 					
Structure	☐ Shows the strong and weak points of the report	Expresses own opinion about topics presented or discussed					
☐ Explanation of formulae and symbols	Finds shortcomings or errors in the report	Relevance of questions to both the reporter and the opponent					
Appropriate models, conformity of dimensions	Relevance of the questions	☐ Draws attention to points missed					
Slides, on-site experiments, audio, video, as appropriate	☐ Contribution to the discussion	by the reporter or the opponent					
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and					
□ Novelty of the report		fight assistant, so we can a please archive your partial grades – please					
Contribution to the discussion —		do not bend					
Final Grade: Reporter	Final Grade: Opponent Revised a	Final Grade: Reviewer ofter IOC feedback and approved by EC on 2011-11-03					

S	CO	r	1		9	G	U		d	e			n	e	5	
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Fight (Round no.): <u> </u>	Room:	<u>-</u> F_	Stage:	2	Problem no.:	1
Juror:0(ga_	luish	200	Signature	e: <u> </u>			

• a presentation of the appropriate concepts, theories and principles of the problem • an explanation of the observed phenomena • an application of appropriate mathematics • reasonable experimental technique to gather and record data (or demonstrate the phenomena if appropriate) • linking of theoretical and experimental findings to draw suitable conclusions • an attempt to communicate difficult or complex ideas in an effective and understandable manner

An opposition should show that:

• the opponent challenged the reporter's understanding of the presented concepts, theories and principles • the opponent understood the appropriate mathematics presented • the opponent critiqued the experimental technique used and questioned the validity of the data • the opponent appreciated and highlighted the strengths and weaknesses of the report

A review should show that:

- the reviewer succeeded in giving an objective summary of the performances the reporter and opponent the reviewer appreciated the important aspects (especially the controversial ones) • the reviewer's personal opinion was in evidence (not just superficial observations) • such personal opinions were informative, non-trivial and demonstrated, where possible, the reviewer's understanding of concepts, theories, principles and appropriate mathematics used by the reporter and the opponent
- The grade for each of the three teams consists of a partial grade for

 The reporter, opponent and reviewer e Consider the following suggestions to e Select each partial grade from each sec 	each start with 5 points. add to or deduct from the initial 5 points. Attion and write it in the corresponding box. It on questions were posed or not finding shortco	, ,
Rep.: France 5	Opp.: Slovenia 5	Rev.: Hungary 5
Physics ±3	Physics ±3	Physics ±3
Correct and relevant physics	Correct and relevant physics	Correct and relevant physics
Scientific approach	Scientific approach	Scientific approach
☐ Validity of conclusions	☐ Validity of conclusions	₩ Validity of conclusions
☐ Accurate answers	☐ Accurate answers	Accurate answers
Presentation ±1	Presentation ±1	Presentation ±1
☐ Clear and understandable	☐ Clear and understandable	☐ Clear and understandable
Appropriate manner	☐ Appropriate manner	☐ Appropriate manner
Overall impression	☐ Overall impression	☐ Overall impression
Reporter ±1 +0,5	Opponent ±1	Reviewer ±1
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion
Structure Explanation of formulae and	Shows the strong and weak points of the report	Expresses own opinion about topics presented or discussed
Explanation of formulae and symbols	☐ Finds shortcomings or errors in	☐ Relevance of questions to both the
Appropriate models, conformity of dimensions	the report Relevance of the questions	reporter and the opponent
Slides, on-site experiments, audio, video, as appropriate	Contribution to the discussion	Draws attention to points missed by the reporter or the opponent
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and
☐ Novelty of the report		fight assistant, so we are archive your partial grades — please
Contribution to the discussion		do not bend
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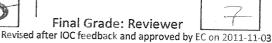
Final Grade: Reporter



Final Grade: Opponent



Final Grade: Reviewer



		Fight (Round no.):	Room: Stage: _	ン Problem no.:
Scoring	Guidelines	Juror: Byland	Signature:	904

• a presentation of the appropriate concepts, theories and principles of the problem • an explanation of the observed phenomena • an application of appropriate mathematics • reasonable experimental technique to gather and record data (or demonstrate the phenomena if appropriate) • linking of theoretical and experimental findings to draw suitable conclusions • an attempt to communicate difficult or complex ideas in an effective and understandable manner

An opposition should show that:

• the opponent *challenged* the *reporter's understanding* of the presented *concepts, theories* and *principles* • the opponent understood the *appropriate mathematics* presented • the opponent *critiqued* the *experimental technique* used and questioned the *validity* of the *data* • the opponent appreciated and highlighted the *strengths and weaknesses* of the report

A review should show that:

Final Grade: Reporter

- the reviewer succeeded in giving an *objective summary* of the performances the *reporter* and *opponent* the reviewer appreciated the *important aspects* (especially the *controversial* ones) the reviewer's *personal opinion* was in evidence (*not* just *superficial observations*) such personal opinions were *informative*, *non-trivial* and demonstrated, where possible, the reviewer's *understanding* of *concepts*, *theories*, *principles and appropriate mathematics* used by the reporter and the opponent
- The grade for each of the three teams consists of a partial grade for physics, presentation and for their specific role.
- The reporter, opponent and reviewer each start with 5 points.
- Consider the following suggestions to add to or deduct from the initial 5 points.

	tion and <i>write it</i> in the corresponding box. o questions were posed or not finding shortco	omings if there were none to find.
Rep.: Trance 5	Opp.: Slovenia 5	Rev.: Hungary 5
Physics ±3	Physics ±3	Physics ±3
☐ Correct and relevant physics	☐ Correct and relevant physics	☐ Correct and relevant physics
☐ Scientific approach	☐ Scientific approach	☐ Scientific approach
☐ Validity of conclusions	☐ Validity of conclusions	☐ Validity of conclusions
☐ Accurate answers	☐ Accurate answers	☐ Accurate answers
Presentation ±1	Presentation ±1	Presentation ±1
☐ Clear and understandable	☐ Clear and understandable	☐ Clear and understandable
☐ Appropriate manner	☐ Appropriate manner	☐ Appropriate manner
☐ Overall impression	☐ Overall impression	Overall impression
Reporter ±1 +1/2	Opponent ±1	Reviewer ±1
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion
Structure	Shows the strong and weak points of the report	Expresses own opinion about topics presented or discussed
Explanation of formulae and symbols	Finds shortcomings or errors in the report	Relevance of questions to both the reporter and the opponent
Appropriate models, conformity of dimensions	Relevance of the questions	Draws attention to points missed
Slides, on-site experiments, audio, video, as appropriate	☐ Contribution to the discussion	by the reporter or the opponent
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and
☐ Novelty of the report		fight assistant, so we can be archive your partial grades — please
Contribution to the discussion		do not bend

Final Grade: Opponent

Scoring Guidelines

Fight (Round no.): 4 Room: F Stage: 2 Problem no.: 11 Juror: KATHRYN Z. & Signature: H Centul

A report should include:

• a presentation of the appropriate concepts, theories and principles of the problem • an explanation of the observed phenomena • an application of appropriate mathematics • reasonable experimental technique to gather and record data (or demonstrate the phenomena if appropriate) • linking of theoretical and experimental findings to draw suitable conclusions • an attempt to communicate difficult or complex ideas in an effective and understandable manner

An opposition should show that:

• the opponent challenged the reporter's understanding of the presented concepts, theories and principles • the opponent understood the appropriate mathematics presented • the opponent critiqued the experimental technique used and questioned the validity of the data • the opponent appreciated and highlighted the strengths and weaknesses of the report

A review should show that:

- the reviewer succeeded in giving an objective summary of the performances the reporter and opponent the reviewer appreciated the important aspects (especially the controversial ones) • the reviewer's personal opinion was in evidence (not just superficial observations) • such personal opinions were informative, non-trivial and demonstrated, where possible, the reviewer's understanding of concepts, theories, principles and appropriate mathematics used by the reporter and the opponent

 The reporter, opponent and reviewer e Consider the following suggestions to a 	consists of a partial grade for <i>physics, present</i> each start with 5 points. add to or deduct from the initial 5 points. tion and write it in the corresponding box.	tation and for their specific role.
	o questions were posed or not finding shortco	omings if there were none to find.
Rep.: William 5	Opp.: <u>Maks</u> 5	Rev.: Danel 5
Physics ±3 at least discuss + 17	Physics ±3 2 +12	Physics ±3
Correct and relevant physics	☐ Correct and relevant physics	Correct and relevant physics
☐ Scientific approach reed next	Scientific approach	☐ Scientific approach
- Validity of conclusions dixed compar	Validity of conclusions	☐ Validity of conclusions
Accurate answers and experience	Accurate answers	Accurate answers
resentation ±1	Presentation ±1	Presentation ±1
Clear and understandable	Clear and understandable	☑ Clear and understandable
Appropriate manner	☐ Appropriate manner	Appropriate manner "1000"
Overall impression	Overall impression	Overall impression
Reporter ±1	Opponent ±1	Reviewer ±1
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion
Structure	Shows the strong and weak points	Expresses own opinion about
Explanation of formulae and	of the report	topics presented or discussed
symbols Appropriate models, conformity	Finds shortcomings or errors in the report	Relevance of questions to both the reporter and the opponent
Appropriate models, conformity of dimensions	Relevance of the questions	Draws attention to points missed
Slides, on-site experiments, audio, video, as appropriate	Contribution to the discussion about vacosity (miles good)	by the reporter or the opponent Great guestions
	Good greshin about plats	This sheet will be collected by the fight assistant, so we can scan it and
☐ Novelty of the report	good grashion doct limbs of	fight assistant, so we be archive your partial grades – please
Contribution to the discussion	plate spacing almi	do not bend
Final Grade: Reporter	Final Grade; Opponent	Final Grade: Reviewer
	good as 12 of force diagram	ofter IOC feedback and approved by EC on 2011-11-03

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Scoring Guidel	inoc 11/1/2.	om: Stage: Problem no.:
application of appropriate mathematics	 reasonable experimental technique to gather and d experimental findings to draw suitable conclu 	n explanation of the observed phenomena • an and record data (or demonstrate the phenomena if sions • an attempt to communicate difficult or
appropriate mathematics presented • th	at: s understanding of the presented concepts, theoria e opponent critiqued the experimental technique to e strengths and weaknesses of the report	es and principles • the opponent understood the used and questioned the validity of the data • the
A review should show that:		
important aspects (especially the control	bjective summary of the performances the report versial ones) • the reviewer's personal opinion was versial and demonstrated, where possible, the used by the reporter and the opponent	s in evidence (not just superficial observations) .
 Select each partial grade from each 	to add to or deduct from the initial 5 points. section and write it in the corresponding box. In no questions were posed or not finding shor	tcomings if there were none to find.
]	
Physics ±3	Physics ±3	Physics ±3
Correct and relevant physics	☐ Correct and relevant physics	☐ Correct and relevant physics
Scientific approach	☐ Scientific approach	☐ Scientific approach
☐ Validity of conclusions	☐ Validity of conclusions	☐ Validity of conclusions
Accurate answers	☐ Accurate answers	☐ Accurate answers
resentation ±1	Presentation ±1	Presentation ±1
Clear and understandable	Clear and understandable	☐ Clear and understandable
Appropriate manner	☐ Appropriate manner	☐ Appropriate manner
Overall impression	Overall impression	☐ Overall impression
eporter ±1	Opposed 11	·
* Immorphism to the contract of the contract o	Opponent ±1	Reviewer ±1
J Quality of experimental technique(s)	☐ Response to the reporter's solution	Provides a thorough review of report and discussion
Structure	☐ Shows the strong and weak point	Į.
Explanation of formulae and	of the report	topics presented or discussed
symbols Appropriate models, conformity	Finds shortcomings or errors in the report	Relevance of questions to both the reporter and the opponent
of dimensions	☐ Relevance of the questions	· ·
Slides, on-site experiments, audio	Contribution to the discussion	Draws attention to points missed by the reporter or the opponent

References, proper citations of ideas and input of others

Slides, on-site experiments, audio, video, as appropriate

☐ Novelty of the report

☐ Contribution to the discussion

Final Grade: Reporter

Final Grade: Opponent

☐ Contribution to the discussion

| Final Grade: Reviewer | Final Grade: Revised after IOC feedback and approved by EC on 2011-11-03

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fight assistant, so we can scan it and archive your partial grades - please

		Fight (Round no.):		Room:	Stage:
Scoring	Guidelines	Juror: Chum	York	(Sign	nature:

Revised after IOC feedback and approved by EC on 2011-11

A report should include:

• a presentation of the appropriate concepts, theories and principles of the problem • an explanation of the observed phenomena • an application of appropriate mathematics • reasonable experimental technique to gather and record data (or demonstrate the phenomena if appropriate) • linking of theoretical and experimental findings to draw suitable conclusions • an attempt to communicate difficult or complex ideas in an effective and understandable manner

An opposition should show that:

• the opponent challenged the reporter's understanding of the presented concepts, theories and principles • the opponent understood the appropriate mathematics presented • the opponent critiqued the experimental technique used and questioned the validity of the data • the opponent appreciated and highlighted the strengths and weaknesses of the report

A review should show that:

Final Grade: Reporter

- the reviewer succeeded in giving an objective summary of the performances the reporter and opponent the reviewer appreciated the important aspects (especially the controversial ones) • the reviewer's personal opinion was in evidence (not just superficial observations) • such personal opinions were informative, non-trivial and demonstrated, where possible, the reviewer's understanding of concepts, theories, principles and appropriate mathematics used by the reporter and the opponent
- The grade for each of the three teams consists of a partial grade for *physics*, *presentation* and for their *specific role*.
- The reporter, opponent and reviewer each start with 5 points.
- Consider the following suggestions to add to or deduct from the initial 5 points.

 Select each partial grade from each sec Don't punish missing 'answers' when n 	ction and <i>write it</i> in the corresponding box. o questions were posed or not finding shortco	omings if there were none to find.
Rep.: Slovenia 5	Opp.: Hungary 5	Rev.: France 5
Physics ±3	Physics ±3	Physics ±3
☐ Correct and relevant physics	☐ Correct and relevant physics	☐ Correct and relevant physics
Scientific approach	☐ Scientific approach	☐ Scientific approach
✓ Validity of conclusions	☐ Validity of conclusions	☐ Validity of conclusions
☐ Accurate answers	☐ Accurate answers	☐ Accurate answers
Presentation ±1	Presentation ±1	Presentation ±1
☐ Clear and understandable	☐ Clear and understandable	☐ Clear and understandable
☐ Appropriate manner	☐ Appropriate manner	☐ Appropriate manner
Overall impression	☐ Overall impression	Overall impression
Reporter ±1	Opponent ±1	Reviewer ±1 fo.5
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion
☐ Structure	Shows the strong and weak points	☐ Expresses own opinion about
🖾 Explanation of formulae and	of the report	topics presented or discussed
symbols Appropriate models, conformity	Finds shortcomings or errors in the report	Relevance of questions to both the reporter and the opponent
of dimensions	☐ Relevance of the questions	☐ Draws attention to points missed
Slides, on-site experiments, audio, video, as appropriate	Contribution to the discussion	by the reporter or the opponent
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and
☐ Novelty of the report		fight assistant, so we con- archive your partial grades – please
Contribution to the discussion		do not bend

Final Grade: Opponent

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Fight (Round no.): 4	Room: F Sta	ge: Problem no	o.: <u>1</u>
Juror: Michael Gien	Cing Signature:	Ciela	

• a presentation of the appropriate concepts, theories and principles of the problem • an explanation of the observed phenomena • an application of appropriate mathematics • reasonable experimental technique to gather and record data (or demonstrate the phenomena if appropriate) • linking of theoretical and experimental findings to draw suitable conclusions • an attempt to communicate difficult or complex ideas in an effective and understandable manner

An opposition should show that:

• the opponent *challenged* the *reporter's understanding* of the presented *concepts, theories* and *principles* • the opponent understood the *appropriate mathematics* presented • the opponent *critiqued* the *experimental technique* used and questioned the *validity* of the *data* • the opponent appreciated and highlighted the *strengths and weaknesses* of the report

A review should show that:

Final Grade: Reporter

- the reviewer succeeded in giving an *objective summary* of the performances the *reporter* and *opponent* the reviewer appreciated the *important aspects* (especially the *controversial* ones) the reviewer's *personal opinion* was in evidence (*not* just *superficial observations*) such personal opinions were *informative*, *non-trivial* and demonstrated, where possible, the reviewer's *understanding* of *concepts*, *theories*, *principles* and *appropriate mathematics* used by the reporter and the opponent
- The grade for each of the three teams consists of a partial grade for physics, presentation and for their specific role.
- The reporter, opponent and reviewer each start with 5 points.
- Consider the following suggestions to add to or deduct from the initial 5 points.
- Select each partial grade from each section and write it in the corresponding box.

 Don't punish missing 'answers' when n 	o questions were posed or not finding shortco	omings if there were none to find.
Rep.: Slovenia 5	Opp.: Hungary 5	Rev.: France 5
Physics ±3	Physics ±3	Physics ±3
☐ Correct and relevant physics	☐ Correct and relevant physics	☐ Correct and relevant physics
☐ Scientific approach	☐ Scientific approach	☐ Scientific approach
☐ Validity of conclusions	☐ Validity of conclusions	☐ Validity of conclusions
☐ Accurate answers	☐ Accurate answers	☐ Accurate answers
Presentation ±1 +0,5	Presentation ±1	Presentation ±1
Clear and understandable	☐ Clear and understandable	☐ Clear and understandable
☐ Appropriate manner	☐ Appropriate manner	☐ Appropriate manner
Overall impression	Overall impression	☐ Overall impression
Reporter ±1 -0,5	Opponent ±1	Reviewer ±1 +0,5
		I
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion
technique(s) Structure	solution Shows the strong and weak points	report and discussion
technique(s) Structure Explanation of formulae and	Response to the reporter's solution Shows the strong and weak points of the report	Provides a thorough review of report and discussion Expresses own opinion about topics presented or discussed
technique(s) Structure Explanation of formulae and symbols	solution Shows the strong and weak points	report and discussion Expresses own opinion about
technique(s) Structure Explanation of formulae and	solution Shows the strong and weak points of the report Finds shortcomings or errors in	report and discussion Expresses own opinion about topics presented or discussed Relevance of questions to both the reporter and the opponent Draws attention to points missed
technique(s) Structure Explanation of formulae and symbols	solution Shows the strong and weak points of the report Finds shortcomings or errors in the report	report and discussion Expresses own opinion about topics presented or discussed Relevance of questions to both the
technique(s) Structure Explanation of formulae and symbols Appropriate models, conformity of dimensions Slides, on-site experiments, audio.	solution Shows the strong and weak points of the report Finds shortcomings or errors in the report Relevance of the questions	report and discussion Expresses own opinion about topics presented or discussed Relevance of questions to both the reporter and the opponent Draws attention to points missed by the reporter or the opponent
technique(s) Structure Explanation of formulae and symbols Appropriate models, conformity of dimensions Slides, on-site experiments, audio, video, as appropriate	solution Shows the strong and weak points of the report Finds shortcomings or errors in the report Relevance of the questions	report and discussion Expresses own opinion about topics presented or discussed Relevance of questions to both the reporter and the opponent Draws attention to points missed by the reporter or the opponent
technique(s) Structure Explanation of formulae and symbols Appropriate models, conformity of dimensions Slides, on-site experiments, audio, video, as appropriate References, proper citations of ideas and input of others	solution Shows the strong and weak points of the report Finds shortcomings or errors in the report Relevance of the questions	report and discussion Expresses own opinion about topics presented or discussed Relevance of questions to both the reporter and the opponent Draws attention to points missed by the reporter or the opponent

Final Grade: Opponent

	Fight (Round no.): Room:	: Stage: Problem no:
Scoring Guidelines	Juror: Olga Inisheva	
4000	Julot: Stea to 12 MED a	Signature:

• a presentation of the appropriate concepts, theories and principles of the problem • an explanation of the observed phenomena • an application of appropriate mathematics • reasonable experimental technique to gather and record data (or demonstrate the phenomena if appropriate) • linking of theoretical and experimental findings to draw suitable conclusions • an attempt to communicate difficult or complex ideas in an effective and understandable manner

An opposition should show that:

• the opponent *challenged* the *reporter's understanding* of the presented *concepts, theories* and *principles* • the opponent understood the *appropriate mathematics* presented • the opponent *critiqued* the *experimental technique* used and questioned the *validity* of the *data* • the opponent appreciated and highlighted the *strengths and weaknesses* of the report

A review should show that:

Final Grade: Reporter

- the reviewer succeeded in giving an *objective summary* of the performances the *reporter* and *opponent* the reviewer appreciated the *important aspects* (especially the *controversial* ones) the reviewer's *personal opinion* was in evidence (*not* just *superficial observations*) such personal opinions were *informative*, *non-trivial* and demonstrated, where possible, the reviewer's *understanding* of *concepts*, *theories*, *principles* and *appropriate mathematics* used by the reporter and the opponent
- The grade for each of the three teams consists of a partial grade for physics, presentation and for their specific role.

 Select each partial grade from each sec 	each start with 5 points. add to or deduct from the initial 5 points. tion and write it in the corresponding box. o questions were posed or not finding shortco	
Rep.: Slovenia 5	Opp.: Hungary 5	Rev.: France 5
Physics ±3	Physics ±3	Physics ±3
Correct and relevant physics	☐ Correct and relevant physics	☐ Correct and relevant physics
─□ Scientific approach	☐ Scientific approach	Scientific approach
☐ Validity of conclusions	☐ Validity of conclusions	₩ Validity of conclusions
— ☐ Accurate answers	☐ Accurate answers	☐ Accurate answers
Presentation ±1	Presentation ±1	Presentation ±1
☐ Clear and understandable	☐ Clear and understandable	Clear and understandable
☐ Appropriate manner	☐ Appropriate manner	☐ Appropriate manner
Overall impression	☐ Overall impression	☐ Overall impression
Reporter ±1	Opponent ±1 +0,25	Reviewer ± 1
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion
[↑] □ Structure	Shows the strong and weak points	
Explanation of formulae and symbols	of the report Finds shortcomings or errors in	Expresses own opinion about topics presented or discussed
☐ Appropriate models, conformity	the report	Relevance of questions to both the reporter and the opponent
of dimensions	Relevance of the questions	
Slides, on-site experiments, audio, video, as appropriate	Contribution to the discussion	Draws attention to points missed by the reporter or the opponent
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and
☐ Novelty of the report		fight assistant, so we con archive your partial grades – please
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Final Grade: Opponent

Final Grade: Reviewer

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines Juror: By and Signature: Posser	

• a presentation of the appropriate concepts, theories and principles of the problem • an explanation of the observed phenomena • an application of appropriate mathematics • reasonable experimental technique to gather and record data (or demonstrate the phenomena if appropriate) • linking of theoretical and experimental findings to draw suitable conclusions • an attempt to communicate difficult or complex ideas in an effective and understandable manner

An opposition should show that:

• the opponent *challenged* the *reporter's understanding* of the presented *concepts, theories* and *principles* • the opponent understood the *appropriate mathematics* presented • the opponent *critiqued* the *experimental technique* used and questioned the *validity* of the *data* • the opponent appreciated and highlighted the *strengths and weaknesses* of the report

A review should show that:

Final Grade: Reporter

- the reviewer succeeded in giving an *objective summary* of the performances the *reporter* and *opponent* the reviewer appreciated the *important aspects* (especially the *controversial* ones) the reviewer's *personal opinion* was in evidence (*not* just *superficial observations*) such personal opinions were *informative*, *non-trivial* and demonstrated, where possible, the reviewer's *understanding* of *concepts*, *theories*, *principles* and *appropriate mathematics* used by the reporter and the opponent
- The grade for each of the three teams consists of a partial grade for physics, presentation and for their specific role.
- The reporter, opponent and reviewer each start with 5 points.
- Consider the following suggestions to add to or deduct from the initial 5 points

 Select each partial grade from each sec 	ction and write it in the corresponding box. To questions were posed or not finding shortco	omings if there were none to find.
Rep.: Slovenia 5	Opp.: Hungary 5	Rev.: France 5
Physics ±3	Physics ±3	Physics ±3
Correct and relevant physics	Correct and relevant physics	☐ Correct and relevant physics
Scientific approach	☐ Scientific approach	☐ Scientific approach
☐ Validity of conclusions	☐ Validity of conclusions	☐ Validity of conclusions
☐ Accurate answers	☐ Accurate answers	☐ Accurate answers
Presentation ±1	Presentation ±1	Presentation ±1
Clear and understandable	☐ Clear and understandable	☐ Clear and understandable
☐ Appropriate manner	☐ Appropriate manner	☐ Appropriate manner
Overall impression	☐ Overall impression	☐ Overall impression
Reporter ±1	Opponent ±1	Reviewer ±1
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion
☐ Structure	☐ Shows the strong and weak points	Expresses own opinion about
Explanation of formulae and	of the report	topics presented or discussed
symbols Appropriate models, conformity	Finds shortcomings or errors in the report	Relevance of questions to both the reporter and the opponent
of dimensions	Relevance of the questions	☐ Draws attention to points missed
Slides, on-site experiments, audio, video, as appropriate	Contribution to the discussion	by the reporter or the opponent
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and
☐ Novelty of the report		fight assistant, so we con archive your partial grades – please
Contribution to the discussion		do not bend
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Final Grade: Opponent

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Fight (Round no.): _	4 Room:	: Stage: Problem no.:	
Juror: Kathya	Zealand	Signature: Kleuly	

• a presentation of the appropriate concepts, theories and principles of the problem • an explanation of the observed phenomena • an application of appropriate mathematics • reasonable experimental technique to gather and record data (or demonstrate the phenomena if appropriate) • linking of theoretical and experimental findings to draw suitable conclusions • an attempt to communicate difficult or complex ideas in an effective and understandable manner

An opposition should show that:

• the opponent challenged the reporter's understanding of the presented concepts, theories and principles • the opponent understood the

appropriate mathematics presented • the operation opponent appreciated and highlighted the st	pponent <i>critiqued</i> the <i>experimental technique</i> use	and questioned the <i>validity</i> of the <i>data</i> • the
important aspects (especially the controvers	ctive summary of the performances the reporter isial ones) • the reviewer's personal opinion was in the trivial and demonstrated, where possible, the red by the reporter and the opponent	evidence (not just superficial observations)
 The reporter, opponent and reviewer of the Consider the following suggestions to select each partial grade from each second consider the following suggestions. 	consists of a partial grade for <i>physics, presen</i> teach <i>start with 5 points</i> . add to or <i>deduct</i> from the initial <i>5 points</i> . ction and <i>write it</i> in the corresponding box. to questions were posed or not finding shorter	
Rep.: A Gresper 5 not knowsh dydn Physics ±3	Opp.: Andrais Posits reed to be 5 made clearer. Physics ±3	Rev.: Samuel 5
Correct and relevant physics Scientific approach Validity of conclusions Accurate answers of of physics only care of physics only Presentation ±1 Clear and understandable Appropriate manner to short Overall impression Reporter ±1	☐ Correct and relevant physics ☐ Scientific approach ☐ Validity of conclusions	Physics ±3 Correct and relevant physics Scientific approach Validity of conclusions Accurate answers Presentation ±1 Clear and understandable Appropriate manner Overall impression
Quality of experimental technique(s)	Response to the reporter's solution	Reviewer ±1 Provides a thorough review of report and discussion
Structure Explanation of formulae and symbols Appropriate models, conformity of dimensions	Shows the strong and weak points of the report weed to be proves for the report.	Expresses own opinion about topics presented or discussed Relevance of questions to both the reporter and the opponent
Slides, on-site experiments, audio, video, as appropriate References, proper citations of ideas and input of others Novelty of the report Contribution to the discussion	Relevance of the questions Contribution to the discussion need to engage with his formula,	Draws attention to points missed by the reporter or the opponent good day of guesto. This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please do not bend
Protection and Control of Control		

Final Grade: Reporter



Final Grade: Opponent



Final Grade: Reviewer

Revised after IOC feedback and approved by EC on 2011-11-03

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 the opponent unde ed the validity of the 	
 the reviewer appre just superficial obsers rstanding of concepts 	rvations) •
their specific role.	
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attention to point reporter or the op	s missed ponent

Revised after IOC feedback and approved by EC on 2011-11-03

Scoring Guidelines

Fight (Round no.): 4 Room:	Stage: Problem no.:
Juror: Akijuldjier	Signature:

A report should include:

• a presentation of the appropriate concepts, theories and principles of the problem • an explanation of the observed phenomena • an application of appropriate mathematics • reasonable experimental technique to gather and record data (or demonstrate the phenomena if appropriate) • linking of theoretical and experimental findings to draw suitable conclusions • an attempt to communicate difficult or complex ideas in an effective and understandable manner

An opposition should show that:

• the opponent challenged the reporter's understanding of the presented concepts, theories and principles • the opponent understood the appropriate mathematics presented • the opponent critiqued the experimental technique used and questioned the validity of the data • the opponent appreciated and highlighted the strengths and weaknesses of the report

A review should show that:

- the reviewer succeeded in giving an *objective summary* of the performances the *reporter* and *opponent* the reviewer appreciated the *important aspects* (especially the *controversial* ones) the reviewer's *personal opinion* was in evidence (*not* just *superficial observations*) such personal opinions were *informative*, *non-trivial* and demonstrated, where possible, the reviewer's *understanding* of *concepts*, *theories*, *principles* and *appropriate mathematics* used by the reporter and the opponent
- The grade for each of the three teams consists of a partial grade for physics, presentation and for their specific role.
- The reporter, opponent and reviewer each start with 5 points.
- Consider the following suggestions to add to or deduct from the initial 5 points.
- Select each partial grade from each section and write it in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find

Rep.: 5	Opp.: 5	Rev.: 5
Physics ±3 ☐ Correct and relevant physics	Physics ±3	Physics ±3
☐ Scientific approach ☐ Validity of conclusions	☐ Correct and relevant physics☐ Scientific approach☐ Validity of conclusions	☐ Correct and relevant physics☐ Scientific approach☐ Validity of conclusions
☐ Accurate answers	Accurate answers	Accurate answers
Presentation ±1	Presentation ±1	Presentation ±1 4 1
☐ Clear and understandable☐ Appropriate manner☐ Overall impression	☐ Clear and understandable ☐ Appropriate manner ☐ Overall impression	☐ Clear and understandable ☐ Appropriate manner ☐ Overall impression
Reporter ±1	Opponent ±1	Reviewer ±1
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion
☐ Structure ☐ Explanation of formulae and	Shows the strong and weak points of the report	Expresses own opinion about topics presented or discussed
symbols	Finds shortcomings or errors in the report	Relevance of questions to both the reporter and the opponent
Appropriate models, conformity of dimensions	Relevance of the questions	Draws attention to points missed by the reporter or the opponent
☐ Slides, on-site experiments, audio, video, as appropriate	☐ Contribution to the discussion	.,
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and
☐ Novelty of the report		archive your partial grades -
Contribution to the discussion		do not bend